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STATE PASS TO NSF FOR INTERNATIONAL PROGRAMS
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SLUG TO DOE/DAS/JMIZROCH; DOE/MGINZBERG
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SUBJECT: NEW DELHI BI-WEEKLY ESTH REPORT: NOVEMBER 2008 THIRD WEEK

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11. (U) Summary: This edition of the New Delhi ESTH biweekly report on science and technology includes an update on the recent Nuclear Regulatory Commission (NRC) Chairman and delegation's visit to India, the commencing of the Indian Space Research Organization's (ISRO) Chandrayaan I experiments, developments on the Indian Supercomputer scene, ISRO and Tata Motors joint effort to develop a fuel cell based bus and India's opening of a new biotechnology research institute. The section on environment includes inputs related to the influence of global warming on apple cultivation in India and the meeting of the Lower Colorado River Authority Chairperson with Delhi Jal Board CEO. The health section includes inputs on consultation with the state of Manipur officials related to care and support for women and children affected by HIV/AIDS, global AIDS program regional management meeting, preparations for the World AIDS day event and consultation with the Government of India (GOI) regarding the counseling tool kit for HIV/AIDS.

Nuclear Regulatory Commission (NRC) Delegation Visit to India

12. (U) The science section supported the Nuclear Regulatory Commission Chairman and his delegation during their 11-29 November meetings in India. The delegation and SCI, ECON and POL officers met

with the various GOI officials including the Foreign Secretary Mr. Shiv Shankar Menon, the Prime Minister's Special Envoy Mr. Shyam Saran, the Principal Scientific Advisor to GOI Dr. R. Chidambaram, the Minister of Science & Technology and Earth Sciences Mr. Kapil Sibal and the Atomic Energy Commission Chairman Dr. Anil Kakodkar to discuss the path forward for US/India cooperation and to encourage India to expeditiously adopt the IAEA Safeguards and Convention on Supplementary Compensation. In addition, the delegation attended the IAEA safeguards conference in Mumbai, visited the Bhaba Atomic Research Center and the Kaiga nuclear power plant in the state of Karnataka, met with US and Indian nuclear industry representatives and participated in a CII-sponsored conference in New Delhi at which Ambassador Mulford and Chairman Klein made remarks.

"Chandrayaan I" Mission Experiments Begin

13. (U) ISRO reported that it has successfully maneuvered Chandrayaan-1, India's first moon spacecraft, launched on October 22, 2008 to its planned operational lunar orbit of 100 kms from the moon surface on November 12 2008. ISRO has also reported that it has already switched on nine of the experimental payloads and all the instruments were working satisfactorily. The data from these instruments were being received by antennas of Indian Deep Space Network (IDSN). The spacecraft operations are being carried out from the Satellite Control Centre (SCC) of ISRO Telemetry, Tracking and Command Network (ISTRAC) at Bangalore. Further, on November 14 2008 ISRO also released the Moon Impact Probe (MIP), one of the 11 payloads of Chandrayaan-1, which successfully hit the Moon's surface near the Moon's South Polar Region after a 25 minutes journey. The MIP stopped functioning after impact due to hard landing. ISRO has reported that it was able to successfully obtain all the information

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gathered by MIP during its descent.

Indian Supercomputers Slip Down in Ranking, Even as India Emerges as One of the Fastest Growing High Performance Computing Market

14. (U) The recently released rankings of the top 500 super computers in the world included two Indian supercomputers namely the Eka (120 Teraflop) from the Tata's Computer Research Laboratory (CRL) and the Param NG (54 Teraflop) from Centre for Development of Advanced Computing (C-DAC). They were ranked thirteenth and sixty ninth, respectively. Last year Eka from CRL was ranked fourth. When SciFSN spoke to Dr. Sunil Sherlekar, Founder and Head of CRL, he said that CRL expected this result, as they had no space for expanding the present system and any higher speed system meant developing a completely new super computer. He said that the current focus was on developing more real life applications in various domains including weather forecasting, aerospace, automobile, digital entertainment, nanotechnology, biotechnology, agriculture, space exploration, financial services and bioinformatics. In the case of C-DAC, the Eleventh five year plan (2007 - 2012) has already set the goal of developing a Petaflop (1000 Teraflop) system and this was confirmed by C-DAC personnel when contacted.

15. (U) It may be mentioned here that both CRL and CDAC already have 40 to 50 customers each. This includes academic institutes, R&D labs and industries from India and abroad. CRL customers include US companies like Boeing and Yahoo. CRL supercomputers were also used for the recent "Chandrayaan I" launch related activities and India's first three dimensional animation movie "Roadside Romeo" released last month. This increasing activity in the High Performance Computing (HPC) in India is also reflected in the recent International Data Corporation (IDC) report on IT hardware in Asia. The IDC report says that the HPC market is expected to be USD 12 billion for 2008 and India with a nearly 100 percent growth per year in this segment is expected to be a key driver. The report further adds that this growth is fuelled by the R&D segments across the spectrum including government, academia and industry. However it is not restricted to R&D and even businesses of different sizes are

using HPC-based modeling and simulation to remain at the top in their respective areas of operation.

ISRO and Tata to Launch a Hydrogen Powered Electric Bus

¶16. (U) ISRO and the Tata Motors have been working jointly towards developing a hydrogen based fuel cell driven electric bus. The design specifications were jointly developed. ISRO has already developed the fuel cell and is also contributing to the development of the liquid hydrogen flow system based on its expertise of working with cryogenic systems for the rockets. The Tatas are developing the locomotive transmission and the hydrogen flow systems. The fuel cell is designed to generate 80 KW power to drive the vehicle. The bus will have the hydrogen cylinders on the rooftop (40 liters

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capacity) and cover about 560 km in one filling. It is designed to carry 60 passengers. As per current estimates the vehicle is expected to cost INR 8 million (USD 160,000) and the hydrogen fuel is expected to cost USD 2.4 per liter. The completely integrated system was originally scheduled to be ready by the end of 2008; it is now expected to be ready by the first quarter of 2009. The green and environment friendly buses are expected to be used during the Commonwealth games in Delhi in 2010. The Tatas have invested INR 50 million (USD 1 million) and ISRO has invested INR 10 million (USD 0.2 million) towards this project.

GOI to Set Up a New International Center for Biotechnology

¶17. (U) The GOI has approved the establishment of a new international center for biotechnology in collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO). The center called as UNESCO Regional Centre for Training and Education in Biotechnology will be set up at Faridabad, Haryana with an initial budget of INR 995.5 million (USD 20 million). The centre will be governed by a Board of Governors with representations from India, UNESCO and other member countries from Asia. The collaboration with UNESCO is expected to facilitate greater interaction with other international agencies including the European Molecular Biology Organization (EMBO) and International Union of Biochemistry & Molecular Biology (IUBMB). The centre is expected to act as the focal point for cooperation amongst the member countries of Asia. It is planned to be a regional hub for interdisciplinary education and training in biotechnology with emphasis on novel education programs relevant to industry. The proposed areas of focus include bio-drug discovery science, nano-science & medicine, imaging techniques, designer crops, bioengineering and biomaterials, intellectual property, technology transfer and regulation to mitigate the shortage of skilled human resources in India and the neighboring countries.

Warming Impact on Apple Cultivators

¶18. (U) Increasing temperatures are forcing apple cultivators to move to higher altitudes in the Indian State of Himachal Pradesh, as per a study by the Himachal Pradesh Agricultural University. The findings are being studied under the Mission on Sustainable Agriculture, one of the eight missions outlined in the National Action Plan on Climate Change, India's national policy document on climate change released by the Prime Minister in June 2008.

Lower Colorado River Authority Chairperson Meets with Delhi Jal Board CEO

¶19. (U) In a meeting with the Chairperson of the Lower Colorado River authority, the Delhi Jal (Water) Board (DJB) Chief Executive Officer Mr.Ramesh Negi outlined DJB's challenges in providing clean

water to its citizens. He elaborated on the DJB's plans to treat water and reduce water losses due to pilferage and poor maintenance of water pipes. Negi agreed that the DJB has not been efficiently run which has encouraged the water mafia to pilfer ground water sources to supply water to households that receive little and contaminated water. The DJB is in the process of announcing global tenders to design, build and operate waste water treatment facilities on a profit sharing basis.

State Level Consultations on Care and Support for Women and
Children, Imphal, Manipur

¶10. (U) State government invited USG to the northeastern state of Manipur to help in rolling out the first level training for their District AIDS Officers across the state. Manipur has the highest HIV prevalence rates in India with a median prevalence rate of 1.58% against a national average of 0.34% (NACO, sentinel surveillance, 2008). HHS/CDC helped to provide the epidemiological perspective for the different districts to suitably modify the control activities in line with the national AIDS control program. Also, during the same visit technical assistance was provided to the state planning and key areas of care and support for people living with HIV/AIDS.

¶11. (U) HHS/CDC also collaborated with various UN agencies including UNICEF, UNDP, UNAIDS and other stakeholders like Bill and Melinda Gates Foundation and Clinton Foundation, to assess the road map for control activities especially for women and children.

Global AIDS Program Regional Management Meeting: Asia and the
Americas, Nov 17 - 21, 2008

¶12. (U) HHS/CDC organized a Global AIDS program regional management meeting at CDC, Atlanta from November 17 - 21, 2008, to orient the field programs on critical management issues. CDC Country Director and financial specialist are in attendance and will be bringing out the field level perspectives and challenges. The consultations are expected to streamline the challenges faced by the field programs while addressing the local issues of management and finances.

World AIDS Day Events - 2008

¶13. (U) December 1, 2008 marks the twentieth anniversary of World AIDS Day. US mission in India was pioneer among the foreign missions in India to come out with HIV/AIDS workplace policy on 1 December 2004. The mission has a strong band of trained peer educators who constantly provide support to HIV/AIDS activities in the mission as well as in their own community levels. The US mission in India has elaborate plans for the World AIDS Day with the embassy and the consulates all hosting and participating in various events in their area.

Follow Up Counseling Toolkit: Consultations with GOI

¶14. (U) Counseling in HIV/AIDS is an important component of care and prevention. HHS/CDC has supported WHO and National AIDS Control Organization (NACO) to develop an India specific module on counseling and testing in HIV. Based on the needs assessment and request, HHS/CDC further piloted a follow-up counseling toolkit in Tamil Nadu and Andhra Pradesh. The toolkit aims to build skills of counselors (particularly those in ART centers) to encourage HIV+ people to practice "positive prevention" behaviors, such as addressing depression and stigma, safer sex, partner notification, partner testing and adherence. Behavioral scientist from HHS/CDC is in consultation with the national program to scale up this effort.

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